

REMARKS/ARGUMENTS

This Response to Final Office Action is responsive to the Final Office Action mailed to Applicants on April 17, 2007. This response is filed within six months of the mailing date of the Final Office Action.

Claims 16-26, 30-35 and 63 are pending in this application. Claims 1-15, 27-29 and 36-62 are cancelled. Claims 16, 21, 22, and 35 have been amended. Claim 63 is new. Applicants respectfully request reconsideration in view of the arguments set forth fully below.

Objection under 35 U.S.C. § 112

Within the Final Office Action, claim 21 has been objected to under 35 U.S.C. §112, as containing language directed to a trademark.

Applicants have amended claim 21 to recite "[t]he method of claim 16 wherein said replica is a word processing document." Applicants respectfully request that the objection to the form of claim 21 be withdrawn.

Rejections under 35 U.S.C. § 101

Within the Final Office Action, claims 16-26, 30-32 and 35 have been rejected under 35 U.S.C. §101, as directed to merely an abstract idea that would not result in a practical application producing a concrete, useful, and tangible result.

Applicants have amended claim 16 and believe that the claim as amended presents statutory subject matter. Claims 17-21 depend from the independent claim 16; therefore, they are allowable.

Applicants have amended claim 22 and believe that the claim as amended presents statutory subject matter. Claims 23-26 depend from the independent claim 22; therefore, they are allowable.

Applicants believe that claim 30 presents statutory subject matter because it teaches functional descriptive material. Claim 30 teaches a data structure that contains a difference file. The function of the difference is that the managing author can reconstruct the edited replica from the difference file. As such, the difference file functions to ultimately display the proposed edits to the managing author.

The Office Action states that claim 30 does not recite a true "data structure" as defined by the New IEEE Standard Dictionary of Electrical and Electronics Terms (5th ed. 1993)—"a

physical or logical relationship among data elements, designed to support specific data manipulation functions." The data structure of claim 30, however, does support "specific data manipulation functions." Using the difference file—which is a part of the data structure—to reconstruct an edited replica is a "specific data manipulation function" designed to eliminate the unnecessary transmission of unchanged data.

Claims 31 and 32 depend from an allowable, independent claim; therefore, they should be allowed.

Applicants have amended claim 35 and believe that the claim as amended presents statutory subject matter. Claim 35, as amended, produces a tangible result. The difference file once transmitted to the managing author is used to reconstruct the edited replica and ultimately display the proposed changes.

Rejections under 35 U.S.C. § 102

The Prior Art (Moody)

Moody et al., U.S. Patent No. 5,890,177 (hereinafter, "Moody") apparently teaches a method and apparatus for consolidating edits made by multiple editors working on multiple document copies.

According to Moody, each editor edits his own copy. The edited copies are then retrieved and compared and a single marked-up document is created in which sections (for example, paragraphs) of the original document and corresponding sections of each of the edited documents (with changes from the original document indicated) are displayed in physically adjacent locations of the display screen. The displayed sections contain both edited and duplicated, unedited text. A set of "consolidation" tools are provided to quickly transfer edits between the physically adjacent areas of the screen and to make, or accept, edits made by any of the editors. A final document copy is made by eliminating the duplicate text in the sections. (Moody, ABSTRACT, See *also* Column 2, Lines 32-46).

The Prior Art Distinguished (Moody)

The Examiner relies upon Moody to reject claims 16, 21, and 30 as being anticipated under 35 U.S.C. § 102(b). To anticipate a claim, a reference must teach each and every element of the claim.

Claim 16, as amended specifically requires, "[a] method, embodied in a computer readable medium, for a collaborating author to respond to a request to review a replica of an

original document sent by a managing author, said method comprising: editing said replica, said editing forming an edited replica; and creating a difference file using said replica and said edited replica; wherein said difference file contains changes the collaborating author has made and memory positions of unchanged segments of the unedited replica; and said difference file is stored in memory for later access."

Claim 16 specifically requires creating a difference file. The difference file contains the changes the collaborating author has made plus the memory positions of unchanged portions of the unedited replica. As a result, the difference file does not contain the unchanged data. See example on p. 21 in Detailed Description of the Invention paragraph 85-91.

Moody does not teach creating a difference file. Moody keeps the changed and unchanged portions of the edited replica together at all times. Moody teaches that each editor should return the edited copy to the managing author. (Moody Column 4, Lines 46-48). In doing so, the editor transmits together both changed and unchanged portions of the edited replica. The unnecessary transmission of unchanged segments is exactly what the present invention avoids.

Another distinguishing factor between Moody and the present invention is that the present invention utilizes its own word processing module. (See Summary of Specification Paragraph. 10) while Moody uses external word processing software. (See Moody Column 4, Line 38-41). These limitations are not taught by Moody. Claim 16 is therefore allowable.

Claim 21 as amended is directly dependent on the independent claim 16. As described above, the independent claim 16 is allowable over the teachings of Moody. Accordingly, claim 21 is also allowable as being dependent on an allowable claim.

The Examiner relies upon Moody to reject claim 30 under 35 U.S.C. § 102(b).

Claim 30 recites, a data structure stored in a computer readable medium for providing an edited replica from a contributing author to a managing author, said data structure comprising: data comprising an identification of said contributing author; and a difference file formed from using said edited replica in conjunction with an unedited replica.

Moody does not teach creating a difference file; thus, it does not disclose a data structure comprising a difference file. While both Moody and the present invention teach methods for identifying the editor, the present invention teaches a data structure comprising the identity of the editor plus the difference file generated from that editor's response. This limitation is not taught by Moody. Claim 30 is therefore allowable.

Rejections under 35 U.S.C. § 103

The Office Action rejects claim 17-20 and 31-34 as being unpatentable over Moody in view of Serbinis et al., U.S. Patent No. 6,584,466 (hereinafter Serbinis). Moody does not teach the limitations of claim 16, and 30 because it does not teach creating a difference file. Claims 16 and 30 are therefore allowable. Claims 17-20 depend from the independent claim 16, and claim 31-34 depend from the independent claim 30. Claims 17-20 and 31-34 are therefore allowable because they depend from allowable independent claims.

The Office Action rejects claim 35 as being unpatentable over Moody in view of Hug et. Al., US Patent No. 5,806,078.

The Prior Art (Hug)

Hug et al., US Patent No. 5, 806, 078 (hereinafter, "Hug") apparently teaches a version management system for storing and retrieving changes to spreadsheet and word processor documents on a digital computer. (Hug, ABSTRACT)

According to Hug, the version management system is preferably integrated into the interface of existing spreadsheet or word processing software to permit a user to access a plurality of versions of spreadsheet or word processing documents. An original version of each document and all alternative versions are stored in a delta format, i.e. storing only the differences from a prior document version, in a common difference data file and version data file. (ABSTRACT)

The Prior Art Distinguished (Hug)

The Office Action rejects claim 35 under 35 U.S.C. § 103(a) as being unpatentable over Moody, in view of Hug.

Claim 35, as amended, recites a system for distributive processing of a plurality of comparisons between a replica sent by a managing author and a plurality of edited replicas edited by a plurality of contributing authors, comprising: a first computer system for creating said replica from said original document; a plurality of second computer systems for receiving said replica, wherein each second computer system of said plurality of second computer systems comprises; a word processing module for editing said replica by a contributing author of said plurality of contributing authors to form an edited replica of said plurality of edited replicas; and a difference module for producing a difference file from said edited replica and

said replica; said difference file stored in memory for later access to reconstruct said edited replica.

Hug fails to teach or suggest generating difference files as claimed. Hug teaches creating a delta file from a script buffer by appending new changes to an existing delta file. (See Hug Figure 55, Column 19, Lines 37-67). This is because Hug teaches a version management system, and the delta file contains a document's editing history, so that the system can reproduce any version of the document at any point in its editing history. The present invention, on the other hand, generates the difference file once. As a result, the difference file in the present invention only contains the final changes a collaborating author proposes. Furthermore the current invention does not generate the difference file by continuously appending a previous delta file as Hug does. Rather, it generates the difference file once.

The Prior Art (Aiken)

Aiken, US Patent No. 6,658,626 (hereinafter, "Aiken") apparently teaches a user interface for displaying document comparison information.

Aiken's user interface has at least one frame for displaying one or more overview bars. Each overview bar represents a document. An overview bar includes sub-bands or segments where each segment represents a passage in the document that matches a passage in at least one other document. Each sub-band is assigned a color and the same color is used to highlight text or content in the passage that matches another passage. By activating the sub-band, e.g. a point-and-click operation using a mouse, the user can pull up the corresponding passage in another frame displaying content from the document.

The Prior Art Distinguished (Aiken)

The Office Action rejects claims 22 and 24-26 under 35 U.S.C. § 103(a) as being unpatentable over Moody, in view of Aiken.

Claim 22, as amended, recites a method, using a computer system, for generating a response to an unedited replica of an original document sent by a managing author to a contributing author for review, comprising: forming a revised replica by editing said unedited replica; partitioning said unedited replica into a first plurality of segments; sorting segments of said first plurality of segments into a binary tree based on a comparison operator; partitioning said revised replica into a second plurality of segments; for a segment of said second plurality of segments, finding a best match in said binary tree to form a block of at least one matching

byte; and creating a difference file comprising said block, wherein said difference file is stored in memory to be transmitted to the managing author.

Aiken does not teach sorting segments of a file into a binary tree based on a comparison operator in order to efficiently search for differences between an edited and original document, Aiken only mentions that a binary tree could be used to store information about a file. (Aiken, Column 9 Lines 36, and 37).

Furthermore, the Office Action states that Moody discloses the limitation, "sorting segments of said first plurality of segments based on a comparison operator," because "Moody . . . compares sections of original documents with sections of edits of original documents." (Office Action page 21, Lines 3, 4).

Moody and the present invention perform comparisons for different purposes, and they use different methods of comparison. First, Moody performs the comparison in order to find the paragraph in the unedited document which was the original paragraph for a given paragraph in the edited copy. Moody then stores both of these paragraphs together and transmits them to the managing author. The present invention, on the other hand, performs a comparison to subsequently record the differences the editing author has made.

Second, Moody uses a linear comparison method, in which each paragraph from the original document is matched against each paragraph in the edited replica. This search runs with $O(N)$ efficiency— N is the number of paragraphs—which is a characteristic of linear searches. The present invention on the other hand, reorganizes and sorts the edited replica into a binary tree based on a comparison operator (e.g. $<$, $>$, $<=$, $>=$). This allows for a more efficient match-finding, as the computer need not visit every node in the tree to find a match. A search in a binary tree runs in $O(\log_2(N))$, which is more efficient than $O(N)$.

Claim 22 teaches away from the limitations of Moody and Aiken, therefore, it is allowable. Claim 24-26 depend from the allowable and independent claim 22, therefore they are allowable.

The Prior Art (Queen)

Queen, U.S. Patent No. RE35,861, (hereinafter, "Queen") apparently teaches a method and apparatus for comparing original and modified versions of a document.

Queen teaches a system that utilizes a hash number generator CPU to generate hash numbers for lines and sentences contained in the documents. Matching hash numbers are

defined as anchorpoints and stored in an anchorpoint memory. A comparator CPU performs a character-by-character comparison of the respective documents radiating outward from each anchorpoint. This comparison generates identity blocks which are defined as blocks which are the same in both documents. Non-identity blocks are defined as difference blocks and are characterized as insertions or deletions depending on their status.

The Prior Art Distinguished (Queen)

The Office Action rejects claim 23 under 35 U.S.C. 103(a) "as being unpatentable over Moody in view of Aiken, and further in view of Queen." (Office Action, page 23)

Claim 23 depends from the independent claim 22. As explained above, Moody does not teach the disclosures in claim 22; therefore, both claims 22 and claim 23 are allowable.

CONCLUSION

No new subject matter has been added by way of the above amendments. For the reasons given above, the applicants respectfully submit that claims 16-26, and 30-35 are now in a condition for allowance. The applicants respectfully request that all rejections be withdrawn and the application be allowed at the earliest date possible. Should the Examiner have any questions or comments, he is encouraged to call the undersigned at (650) 838-4300 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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